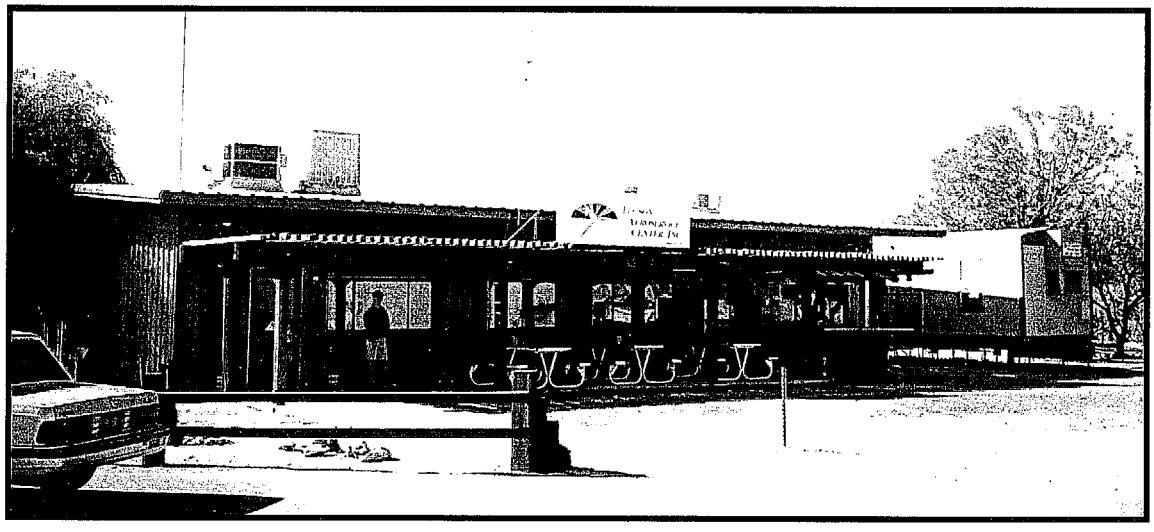
Chapter One
INVENTORY

INVENTORY



The inventory of existing conditions at Avra Valley Airport will serve as an overview of the airport, its facilities, its role in regional and national aviation systems, and the relationship to development that has occurred around the airport over the years. The information outlined in this chapter provides a foundation, or starting point for all subsequent evaluations.

Developing the master plan for the Avra Valley Airport requires collecting and evaluating information relating to the airport and surrounding area. This information includes:

- Physical inventories and descriptions of facilities and services currently provided at the airport.
- Background information relating to the Avra Valley Airport service area and descriptions of development that has taken place in the airport environs recently.
- Population and socioeconomic information that provides an indication of the market and possible future development in the region surrounding the Avra Valley Airport.
- An overview of existing regional plans and studies to determine their potential influence on the development and implementation of the airport master plan.

An accurate and complete inventory is essential to the success of the master plan since the findings, conclusions and recommendations made in the plan are dependent upon information concerning conditions on and around the airport. This information was obtained through on-site investigations of the airport and interviews with airport staff, airport tenants, and representatives of various City and County offices. Additional information was obtained from documents provided by the Federal

Aviation Administration (FAA), the Arizona Department of Transportation - Aeronautics Division (ADOT), and the Pima County Department of Transportation (PDOT), Real Property Division.

REGIONAL SETTING

Avra Valley Airport is located on ±570 acres of County-owned land in northeastern Pima County, Arizona. The Airport is surrounded by the Town of Marana, which is approximately 18 miles northwest of Tucson's central business district. Situated in Avra Valley near the Lower Santa Cruz River, Marana was founded in the 1880's in conjunction with the arrival of the railroad. Today, Marana is the main trade and community center for the surrounding 500 square mile rural area.

Marana is within the Greater Tucson Metropolitan Area, and as such is included in the Tucson Metropolitan Statistical Area (MSA). One of the fastest growing urban areas in the United States, with a current metropolitan area population of 766,700, Tucson should top one million shortly after the turn of the century.

The high Sonoran-type desert surrounding the Tucson area is rich in its variety of natural growth. Drought-tolerant, green trees such as the Palo Verde, Mesquites and Cottonwoods are found in abundance here. Several varieties of cacti brighten the desert with their colorful blooms from April to late May. Nestled in a desert valley, Tucson is surrounded by mountain ranges. The city is cradled by the Catalina Mountains rising 9,100 feet on the north, to the east the Rincon Mountains, to the west the Tucson Mountains, and the Santa Rita and Sierrita Mountains to the south.

Avra Valley Airport serves the general aviation needs of North Tucson, Marana, and northeastern Pima County. This rapidly developing area of Pima County is forecast to continue its dynamic growth well into the next century. Increased aviation demand may come with this continued growth and development.

Avra Valley Airport is easily accessible to Interstate 10 (approximately five miles east), which connects Tucson to Phoenix, and to Avra Valley Road (2-lanes) and/or Sandario Road (2-lanes) to the south. The Airport's main entrance is on Avra Valley Road, west of the Avra Valley Road/Sandario Road intersection. The Airport's location and entrance is indicated by signage mounted on the stuccoed block wall which is located south of the Airport's main parking area. **Exhibit 1A**, depicts the airport in its regional setting.

Located directly north of the Airport is the Cental Arizona Water Conservation District's Water Recharge Pilot Project, and Pima County's Lower Santa Cruz River Replenishment Project Basins. Land east of and adjacent to the Airport is classified as "Open Space: Recreational", beyond this land and further east is the Central Arizona Project Canal, which traverses land zoned for low density residential. To the south and west of the Airport is land classified as "Open Space: Agricultural," as is the case with any land uses north of the Airport which are not encompassed by the previously discussed groundwater reclamation projects. The surrounding land uses discussed in this section are under the jurisdiction of the Town of

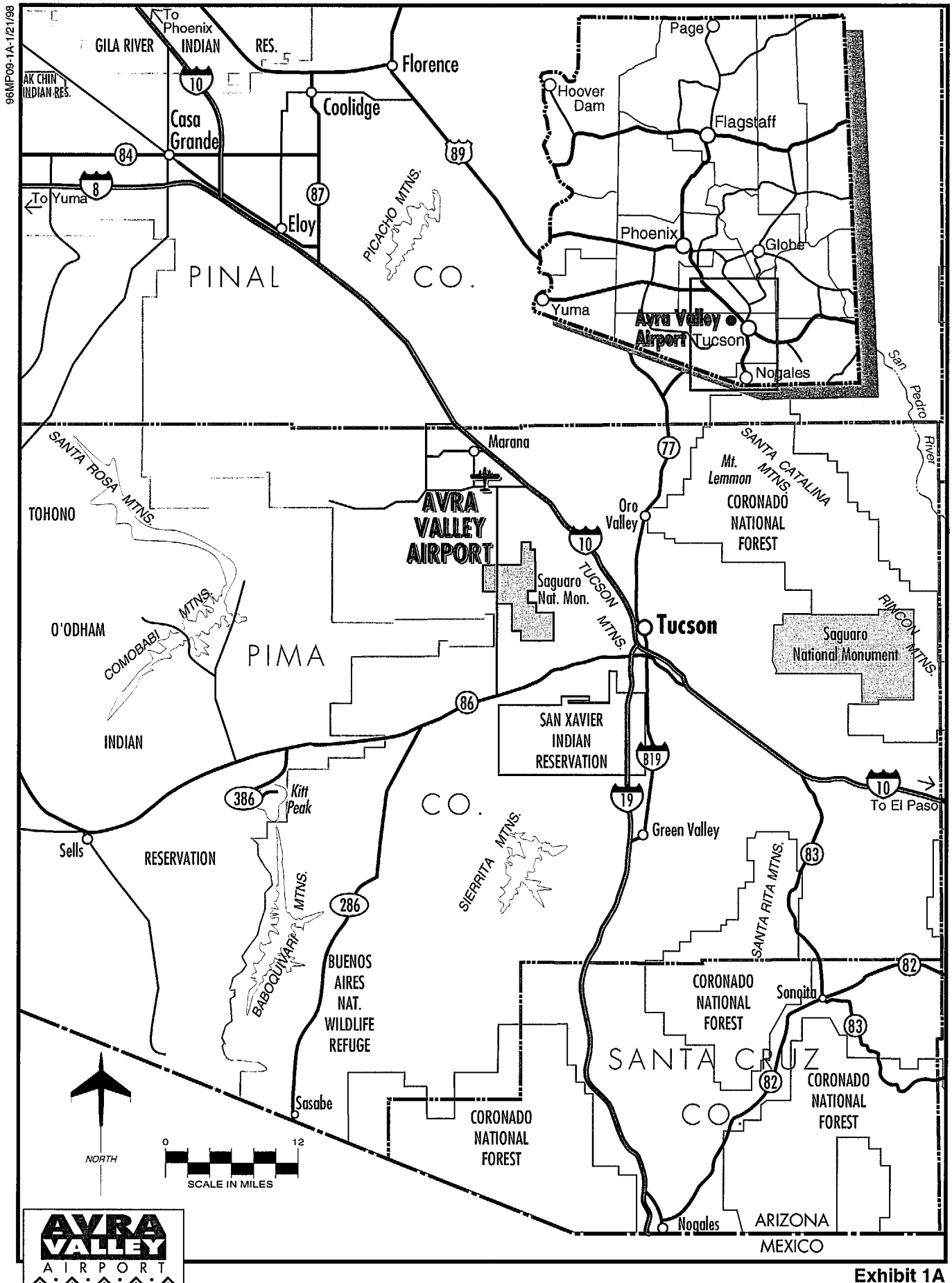


Exhibit 1A
LOCATION MAP

Marana, and were taken from the *Future Development Plan, Town of Marana, Arizona*, as approved and published in February 1997.

THE AIRPORT'S SYSTEM ROLE

Airport planning exists at several levels from local to state to national. Each level has its own emphasis and purpose. The airport master plan provides planning from the local/regional level, Avra Valley Airport is a part of the Pima Association of Governments (PAG) Regional Aviation System, and as such, is included in PAG's *1995 Regional Aviation System Plan (RASP) Update*. The purpose of the RASP, which is updated periodically, is to identify needed improvements in the Region's system of public airports, and provide coordination between PAG and each airport's respective sponsor in order to ensure the continued adequacy and efficiency of the County's integrated air transportation system. The RASP stresses Avra Valley Airport's importance to the Regional aviation system by identifying it as the only airport within the system that accommodates special use aviation, such as skydiving and experimental aircraft.

At the state level the airport is included in the *Arizona State Aviation System Plan (SASP)*. The mission of the *SASP*, like the PAG RASP, is to ensure that on a statewide level, Arizona has an sufficient and effective airport system that will serve its aviation needs well into the next century. The *SASP* defines each airport's specific role in the State aviation system and establishes funding requirements. Through the *State's Continuous Aviation System Planning Process (CASPP)*, the *SASP* is updated every five years. The most recent update to the *SASP* is the *1995 Arizona State Aviation Needs Study (SANS)*. The mission of the *SANS* is to provide policy guidelines that promote and maintain a safe aviation system in Arizona, assess the State's airports capital improvement needs, and identify resources and strategies to implement the plan. The Arizona *SANS* for 1995 encompasses all public and private airports and heliports that are open to the public, including American Indian and recreational airports.

The Arizona SANS and PAG RASP help to define the Airport's role in both a regional and statewide context. An understanding of the Airport's function within these system plans can be of great value in the planning of future improvements to Avra Valley Airport.

On the national level, the airport is included in the *National Plan of Integrated Airport Systems (NPIAS)*. This includes 3,660 airports that are important to the national air transportation system. Avra Valley Airport is classified in the *NPIAS* as a reliever airport. Reliever airports are general aviation airports in metropolitan areas that are intended to reduce congestion at larger commercial service airports by providing general aviation pilots with alternative landing sites. Additionally, they provide the surrounding areas with air transportation access. Reliever airports nationwide now account for the majority of aircraft operations in major metropolitan areas. The *NPIAS* includes total estimates on development needs for the nation's airports that qualify for federal funding assistance.

PREVIOUS MASTER PLAN

The previous airport master plan was finalized in June of 1987 with numerous recommended improvements. Several projects have been completed from the 1987 master plan recommendations including the following:

- Extension of Runway 12-30 to 6901 feet.
- Construction of a parallel taxiway to compliment Runway 12-30 upgrades.
- Property acquisition to facilitate Runway 12-30 lengthening.
- Construction of new T-hangars.
- Construction of NDB and AWOS installations, (NDB/AWOS were commissioned, June 1999).
- Relocate and upgrade airport security fencing.

In addition, since the 1987 master plan, there have been three Airport Layout Plan (ALP) updates. These updates were done in 1991, 1994, and late 1997 to reflect various changes to the airport. The changes detailed in these updates included upgrades to Runway 12-30 visual approach aids; airport drainage improvements; airport property line revisions, new hangar and apron construction, etc. Upon completion of each update the Airport Layout Plan (ALP) was submitted to the FAA for revalidation/approval.

HISTORICAL PERSPECTIVE

Avra Valley Airport, formerly known as Marana Auxiliary No. 2, was built during World War II by the U.S. Army as part of a system of auxiliary airfields to Pinal Airpark (originally Marana Airbase). Primarily a flight training base for military aviators during World War II, Pinal Airpark also served as the home base for operations. The related system of auxiliary fields acted as remote facilities to alleviate flight congestion at Pinal Airpark.

Original development at the airfield at Avra Valley consisted of four 3000 foot runways. This runway configuration included two sets of parallel runways set 1000 feet apart at right angles to each other. A perimeter taxiway encircled the runways and the infield area was paved. The sole purpose of the airfield was for practicing takeoffs and landings, and no other facilities were provided. At the conclusion of World War II, the airfield was abandoned and the pavement fell into disrepair.

A businessman from Tucson leased the airport in 1968 from the Bureau of Land Management (BLM) and reactivated it for personal and public use. He then formed Avra Air to revive and operate the airport. Avra Air rehabilitated both runways and 75 percent of the perimeter taxiway that served as the basic airfield configuration for the next twenty years. This activity spurred interest from other aircraft owners and spawned additional development. Further improvements made at this time included construction of a large conventional hangar, two T-hangar units, and the installation of two 10,000 gallon aboveground fuel storage tanks. Water was supplied to the airport by a newly drilled well and additional utilities were extended onto the airport.

In 1974, the Bureau of Land Management authorized the assignment of the original lease from Avra Air to Pima County. In making this transfer, the aforementioned businessman

included his interest in the improvements at the airport as a gift to Pima County. Since then Pima County has maintained this public use airport but has subleased part of the airport to private enterprise. The main FBO at the time and into the 1980's was Avra Valley Aviation which performed most aircraft services found at an airport of this size and type. By 1982, the county had acquired fee simple interest in the airport and Avra Valley Aviation continued its sublease with regard to airport operations and aircraft servicing. Avra Valley Aviation was responsible for many additional airport improvements. These improvements ranged from a new FBO/Terminal building to four additional T-hangars and a new maintenance hangar. Also, opening at this time was an on-site restaurant facility.

Currently, Avra Valley Airport is owned, operated and maintained by Pima County. Airport management is conducted off-site at the County's Real Property Division offices in downtown Tucson. The airport manager, the only permanent full-time employee assigned to the airport, conducts administration duties from these offices. Future plans, however, call for the airport manager to be located on the airport site itself. Airport maintenance operations are presently performed by Pima County Department of Transportation personnel.

HISTORICAL AIR TRAFFIC ACTIVITY

The recording of air traffic activities is an important function in the operation of an airport. Historical accounting of based aircraft, and aircraft operations (takeoffs and landings) provide the basis for forecasting future aeronautical activity trends. This data will serve as the basis later in this master plan for determining future airport facility requirements. The based aircraft and operations summary statistics, presented in **Table 1A**, are estimates, and cover the period from 1983 through 1997. Data concerning based aircraft for the years 1983, 1990, and 1995 are based on ADOT's registered aircraft numbers for Avra Valley Airport. The accuracy of this data depends upon the registered aircraft owner listing Avra Valley Airport as the basing location of their aircraft, and not using their home or another address instead.

Based on information supplied by Tucson Aeroservice Inc., currently, there are approximately 206 aircraft based at the Airport. The breakdown of this aircraft population consists of 160 single-engine piston, 27 twin-engine piston, 8 four-engine piston, 5 turbo prop, 2 jets, 2 micro jets and 2 helicopters. Additionally, approximate operation totals for October 1996 through October 1997 were supplied by TAC. Totals of both categories were derived from aircraft storage lease information and related data maintained by Tucson Aeroservice Inc. Comparison of the data depicted in **Table 1A**, reveals an annual average increase of 5.8 percent in based aircraft, while operations have shown a 3.9 percent increase in this same time period.

The large disparity of based aircraft numbers for the years detailed in **Table 1A**, will warrant further, detailed investigation so as to provide more accurate based aircraft counts used in aviation forecasting later in this master plan (Chapter Two).

Table 1A
Historical Based Aircraft and Operations Estimates

Year	Based Aircraft	Annual Operations
1983[1]	94	42,000
1990[2]	86	46,002
1995[3]	78	48,300
1997[4]	206	71,300

[1] *Arizona Aviation Needs Study*, ADOT - Aeronautics Division, August 1985
[2] *Aviation Needs Technical Report*, ADOT, July 1990
[3] Based aircraft numbers from ADOT - Aeronautics Division, January 1998, Annual Operations from *PAG RASP*, Adequacy and Deficiency Tables, Pima Association of Governments (PAG), 1994
[4] Tucson Aeroservice Center, Inc., October 1997

AIRPORT FACILITIES

Airport facilities can be divided into two broad categories: airside and landside. Airside facilities are those facilities directly associated with aircraft operations. The landside category can be defined as facilities that provide the transition from ground to air transportation.

AIRSIDE FACILITIES

Airside facilities include runways, taxiways, and airport lighting. Also, incorporated in this discussion of airport facilities is a presentation of navigational and landing aids serving the Airport, as well as area airspace and air traffic control. **Exhibit 1B, Airside Facilities**, depicts the existing airside facilities available at Avra Valley Airport.

Runways

Avra Valley Airport is served by two runways. Runway 12-30, 6901 feet long by 100 feet wide, is the main runway at the Airport. Runway 12-30 is orientated northwest to southeast, is constructed of asphaltic-concrete, and is in good condition. According to the *1995 State Aviation Needs Study (SANS)*, this runway is strength-rated at 12,500 pounds for single wheel loading (SWL). According to PDOT, a two-inch asphalt overlay completed in March 1996 increased the strength-rating of this runway to 30,000 pounds SWL, 60,000 pounds dual wheel loading (DWL), and 140,000 pounds dual tandem wheel loading (DT). Strength ratings relate to aircraft weight, the number of wheels incorporated into the landing gear, and the design of each main landing gear strut.

The crosswind runway, Runway 3-21 is oriented southwest to northeast and intersects Runway 12-30 at a right angle. Runway 3-21 is 4201 feet in length by 75 feet in width, with a 260-foot threshold displacement on Runway 3, and is also constructed of asphaltic-concrete. The initial 1000 feet of

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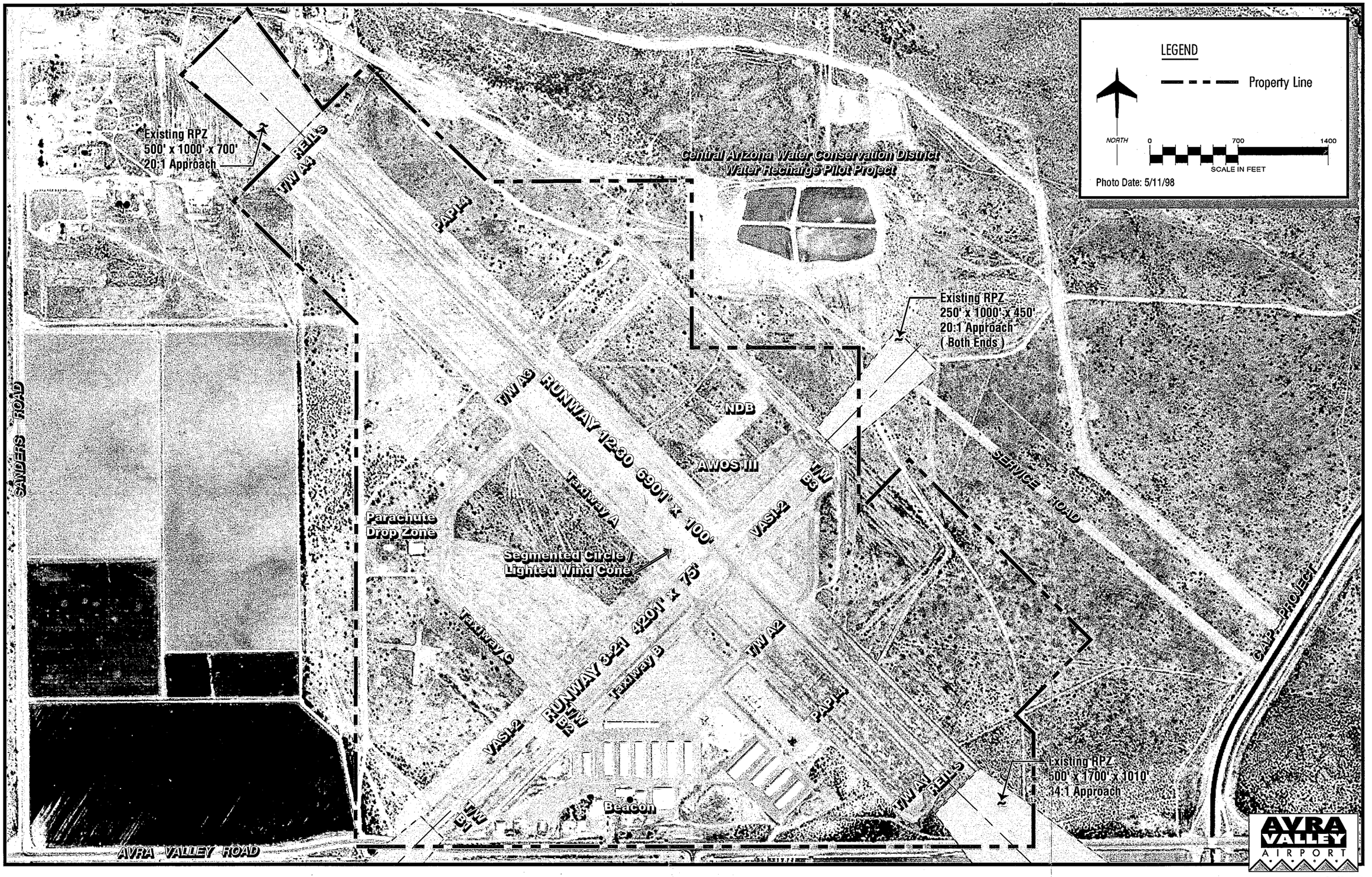

Exhibit 1B
AIRSIDE FACILITIES

Runway 3 is in extremely poor condition, while the remainder of Runway 3-21 is in fair-to-poor condition. Runway 3-21 has a pavement strength-rating of 12,500 pounds single wheel loading (SWL). A summary of runway data for the Airport is presented in **Table 1B**.

TABLE 1B
Runway Data
Avra Valley Airport

	Runway 12-30	Runway 3-21
Length (feet)	6,901	4,201
Width (feet)	100	75
Surface Material	Asphaltic- Concrete	Asphaltic- Concrete
Pavement Strength (lbs)	30,000 (DW)	12,500 (SW)
Edge Lighting[1]	MIRL	MIRL
Visual Approach Aids	PAPI-4 (Both) REIL (Both)	VASI-2 (Both)
Markings	Visual/Visual	Visual/Visual

Taxiways

The existing taxiway system at Avra Valley Airport consists of both full and partial length parallel taxiways, stub taxiways, and two sections of the original perimeter taxiway system that served the airfield during its early military history. **Exhibit 1B**, illustrates the taxiway system at the Airport.

Runway 12-30 is served by Taxiway A, a 35-foot wide, full length, parallel taxiway. Run-up/holding aprons are available at each runway threshold. This taxiway intersects Taxiway B and provides terminal area and apron area access. A construction project involving taxiway widening and lighting is scheduled for Taxiway A in the spring of 1998. Taxiway B is a partial length, parallel taxiway that extends from the displaced threshold of Runway 3 to the threshold of Runway 21. This taxiway is 35-feet wide and serves as the main access to the T-hangar, tie-down, and terminal areas.

Taxiway C is part of the original perimeter taxiway system, and connects Taxiway A to Runway 3-21, Taxiway B and the terminal area. This taxiway is 40-feet wide and also provides airside access for Marana Skydiving Center and The Constellation Group, two aviation businesses operating on the west side of the airport.

Another section of the original perimeter taxiway, Taxiway A3, connects Runway 12-30 to Taxiway B and the terminal area. This taxiway is also 40-feet wide.

Additionally, there is a system of stub taxiways that connect the parallel taxiways to their respective runways and the terminal area. All the taxiways at the airport have a pavement strength-rating of 12,500 pounds single wheel loading (SWL).

Airfield Lighting and Pavement Markings

Airfield lighting and pavement markings are essential components to efficient aircraft operations at an airport. Lighting aids extend an airport's usefulness into periods of darkness and/or poor visibility, while pavement markings assist in aircraft movement at the airport. Descriptions as to the variety of lighting aids and pavement markings existing at Avra Valley Airport follows.

Identification Lighting: The location and presence of an airport at night is indicated by the rotating airport beacon. The airport beacon at Avra Valley Airport is atop a 50-foot tower that is east of Hangar "B" and just south of the electrical vault. This rotating beacon is equipped with an optical system that alternately projects two beams of light, one green and one white, 180 degrees apart.

Visual Approach Aids: Runway 12-30 is equipped with Precision Approach Path Indicators (PAPI-4's) installed near each runway end. A PAPI is a system of colored lights arranged to provide visual descent guidance information to the pilot during approach to the runway. These light systems are placed on the left side of the runway perpendicular to the runway centerline. The lights produce a signal presentation that indicates to the pilot whether they are above, below, or on the designed descent path to the runway.

Runway 3-21 is equipped with a similar light system known as a Visual Approach Slope Indicator (VASI-2). Again, these systems are located on the left side near the end of each runway and provide the pilot with visual descent path information.

Runway Lighting: Both Runway 12-30 and Runway 3-21 are equipped with Medium Intensity Runway Lighting (MIRL). MIRL's are runway edge lights that provide an outline of the runway for nighttime operation and during periods of low visibility. These lights are essential to safe operations during these periods.

Runway End Identification Lighting: Runway 12-30 is equipped with Runway End Identification Lights (REIL's). REIL's provide positive and rapid identification of the approach end of the runway, and are typically used where approach lighting is unavailable. The REIL systems are normally installed at each runway threshold, and consist of two synchronized flashing lights that face approaching aircraft.

Taxiway Lighting: Taxiway lights provide safe operating conditions for aircraft ground movement at night and during periods of low visibility. At present, there are no taxiway lighting systems at Avra Valley Airport.

Other Lighting: A lighted wind cone with a segmented circle is located near the intersection of Runways 12-30 and 3-21. Pilots use the wind cone for approximate surface wind direction and speed before takeoffs and landings, while the segmented

circle indicates traffic pattern direction to the pilot. Additionally, four auxiliary windcones, though not lighted, are positioned on the airfield near each runway end.

Pavement Markings: Pavement markings, both on the runways and taxiways aid in aircraft movement at the airport. The basic markings on Runway 3-21, and Runway 12-30 identify runway centerline and designation. Runway 3 has additional markings that indicate a displaced threshold and extend from the actual runway pavement end to where the 260-foot displaced threshold is located. The taxiways at the Airport are all marked with centerline striping, and certain taxiways are also denoted with edge marking as well.

Navigational Aids

Navigational Aids are electronic devices that provide point-to-point guidance and position data to properly equipped aircraft in flight. Located on or near the airport, navigational aids can be classified as either enroute or terminal area navigational aids.

Enroute Navigational Aids: These ground-based electronic devices are used by pilots when flying from one airport to another. Currently, the four types of electronic navigational aids available to aircraft enroute to Avra Valley Airport include the Very High Frequency Omnidirectional Range (VOR) facility, two nondirectional beacon (NDB) facilities, Loran-C, and the Global Positioning System (GPS).

The first and most common enroute navaid, the VOR, transmits a radio signal every degree to provide 360 individual navigational courses. Often, the VOR is combined with distance measuring equipment (DME) which provides both distance and direction information to pilots. Civilian VOR's and military tactical air navigation aids (TACAN's) are commonly combined to form a VORTAC. These VORTAC's provide distance and direction information to both civilian and military pilots. The Tucson VORTAC, located 24.3 nautical miles southeast of the airport at Tucson International Airport, can be used by pilots navigating to or from Avra Valley Airport.

The next two enroute navaids available to aviators are the Ryan NDB and the Robles NDB, located 16.5 nautical miles southwest and 21.8 nautical miles northeast, respectively. An NDB facility transmits nondirectional radio signals that a properly equipped aircraft can use to determine the bearing to and from the NDB facility, and then "home" or track to or from the station. The on-site NDB facility at Avra Valley Airport was inspected and commissioned by the FAA in June 1999.

Loran-C is a ground-based enroute navigational aid which utilizes a system of transmitters located in various locations across the continental United States. LORAN-C varies from the VOR as pilots and aircraft are not required to navigate using a specific facility (with the VOR, pilots must navigate to and from a specific VOR facility). With properly equipped aircraft, pilots using Loran-C can directly navigate to any airport in the United States.

GPS is an additional enroute navigational aid for pilots enroute to the airport. GPS was initially developed by the United States Department of Defense for military navigation around the world. Increasingly, over the last

few years, GPS has been utilized more in civilian aircraft. GPS uses satellites placed in a fixed orbit around the globe to transmit electronic signals which properly equipped aircraft use to determine altitude, speed, and navigational information. GPS is similar to Loran-C in that pilots do not have to navigate to or from a specific navigational facility. GPS provides the greatest level of accuracy of all enroute navigational aids.

In the mid 1990's, the FAA instituted a 15-year program to gradually phase out and replace all traditional enroute navigational aids with GPS by the year 2010. The original FAA phase-out schedule for traditional navigational aids included VOR's between 2005 and 2010, NDB's between 2000 and 2005, and Loran-C by the year 2000. However, due to several factors such as technical problems, budget reductions, and risk assessment studies, the tentative phase-out schedule for this GPS transition program has been extended an additional 10 years.

Instrument Approach Procedures

Instrument approach procedures are a series of predetermined maneuvers established by the FAA using electronic navigational aids that assist pilots in locating an airport during low visibility and cloud ceiling conditions. As previously discussed, the on-airfield NDB facility was commissioned in June 1999, while GPS approach procedures to Runway 12L have been submitted to the FAA, and are currently undergoing the review and approval process.

The FAA is proceeding with an aggressive program to establish 500 new instrument approaches each year at airports across the nation using GPS. Since GPS does not require expensive ground-based equipment for the transmission of electronic navigational signals, GPS instrument approaches can be developed to almost every airport and at a low cost. The facility needs evaluation, conducted in Chapter 3, will examine the various requirements for establishing GPS instrument approaches at the airport.

Terminal Area Navigational Aids: Avra Valley Airport has no terminal navigational aids.

LANDSIDE FACILITIES

Landside facilities consist of those entities that are essential to the accommodation of aircraft, pilots and passengers on the airport. The landside facilities available at Avra Valley include fixed base operator (FBO) facilities, aircraft hangars and shades, aircraft parking aprons, fuel storage/dispensing facilities, auto parking, firefighting facilities, utilities, weather observation facilities, and other ancillary businesses that contribute to airport support.

Fixed Base and Speciality Operators

At present, 10 business entities are operating at Avra Valley Airport, employing approximately 100 people. The main FBO at the airport is Tucson Aeroservice Center (TAC), Inc. They are a full service facility offering aircraft charter, flight training, major aircraft maintenance, aircraft sales and rentals, aircraft storage, fueling and line services. In addition, their office and administration building, presently 2,400 square feet, serves as the general aviation terminal building for the

Airport. An attached expanded area totaling nearly 7,000 square feet is currently unoccupied. Aircraft repairs and maintenance are performed in their 8,000 square foot conventional hangar located east of the office/administration building.

Tucson Aeroservice Center, Inc. has 30 full-time employees including certified pilots, aircraft mechanics and flight instructors. The FBO has a fleet of 14 fixed-wing aircraft, 6 of which are used for flight training, and employs 4 flight instructors. They have 7 aircraft available for "on demand" charter service for either passenger or cargo, and 10 aircraft available for rent. Also employed by Tucson Aeroservice Center are 7 aircraft mechanics certified for all types of aircraft 12,500 pounds and below.

Tucson Aeroservice leases aircraft storage space for 162 aircraft in 13 separate structures that include 11 T-hangars (114 aircraft), 1 T-shade structure (28 aircraft), and a 22,500 square foot conventional hangar (20 aircraft). Additionally, they have 94 aircraft tie-down spaces available for lease located on two separate ramp areas that border the parallel taxiways. These structures and tie-down areas are depicted on **Exhibit 1C, Landside Facilities**.

Pima Aviation Inc. (PAI), under the same ownership as Tucson Aeroservice Inc., is the master lease holder at Avra Valley Airport. PAI's leases include: 26.4 acres for the main FBO area known as the "Operators Designated Area" which contains the TAC facilities, Pima Aviation offices, and others; 10 acres for the "Jump Site" (Marana Sky Diving Center); 7.91 acres identified as the "Airport Hangar Site", 2.5 acres called the "Woodcrafters" site, and another 2.5 acre site leased to The Constellation Group. Pima Aviation, Inc. has two employees who also work for TAC as well.

Marana Skydiving Center, located off Taxiway C on the west side of the airport, is a speciality operator offering mainly parachute sales, chute materials sales, sport chute repacking, and jump instruction. International competitive jump teams from countries such as France, Norway, and Sweden train here at various times each year. In the past, Marana Skydiving Center has contracted with United States government to provide specialized training involving U.S. military personnel. Additionally, they are subcontractors to TRW, Inc., a defense contractor in Sierra Vista, Arizona, to which they supply chute services for the "Hunter" drones that are used for military weapons training. They are housed in a 100' x 120' conventional hangar facility, which includes both office and aircraft storage/maintenance areas. Currently, they have six (6) full time employees, and twenty (20) part time employees that includes pilots.

Marana Skydiving owns nine (9) aircraft, the workhorse of which is an 18 passenger, Beech King Air modified for skydiving that can handle 40 cycles (720 jumps) per day. Tucson Aeroservice has leased them one 1,200 gallon, JetA fuel truck for their aircraft fueling needs and they also have automobile fueling facilities on their site. Their 10-acre facility includes an aircraft apron/parking area, parachute landing zone, and hangar/office complex.

The Constellation Group, another speciality business, is north of Marana Skydiving. They offer maintenance, repair, and restoration services for owners and collectors of the Lockheed Constellation transport aircraft that

were manufactured during the 1940's and 50's. Like Marana Skydiving, they have airside access to the Airport by way of Taxiway C.

Northwest of The Constellation Group is a five (5) acre parcel leased from the County by Maricopa Aircraft Service, Inc. They too are a speciality operator whose business is the storage and restoration of vintage, large transport-type aircraft. Airside access for this business is provide by Taxiway A. Presently there are no buildings or structures located on this five (5) acre parcel.

Skywords Aviation provides general aircraft repair and restoration services, and is located east of Tucson Aeroservice Center's maintenance hanger and just north of the airport rotating beacon. Housed in a 3000-square foot facility, including office and aircraft storage space, they have been at Avra Valley Airport since 1991 and presently have three (3) full time employees.

For purposes of discussion, the above described companies are the major businesses operating at the Airport while **Table 1C** offers a complete listing and brief description of all on-site, airport businesses.

TABLE 1C
FBO's and Speciality Operators
Avra Valley Airport

Business Name	Type of Business	No. Of Units/Total Facility Area (Approx. Square Feet)
Tucson Aeroservice Center, Inc. (TAC)	Full Service FBO	2 Units/16,000 Sq. Ft.
Pima Aviation, Inc. (PAI)	Airport Leasing and Development	1 Unit/600 Sq. Ft.
Marana Skydiving Center, Inc.	Speciality FBO	1 Unit/12,000 Sq. Ft.
Skywords Aviation, Inc.	Aircraft Repair/Restoration	1 Unit/3,000 Sq. Ft.
The Constellation Group	Aircraft Repair/Restoration	1 Unit/6,400 Sq. Ft.
Custom Aircraft	Aircraft Fabrication	1 Unit/3,600 Sq. Ft.
Sierra Pacific Inc.	Charter Air Cargo	Ramp and Apron Only
Sky Rider Coffee Shop	Restaurant	1 Unit/3,000 Sq. Ft.
Aero Services, Inc.	Aircraft Repair/Restoration	Shares space with The Constellation Group
Patty Wagstaff Airshows	Airshows	1 Unit/2,500 Sq. Ft.
Maricopa Aircraft Services, Inc.	Aircraft Repair/Restoration	5 acre parcel (No structures)

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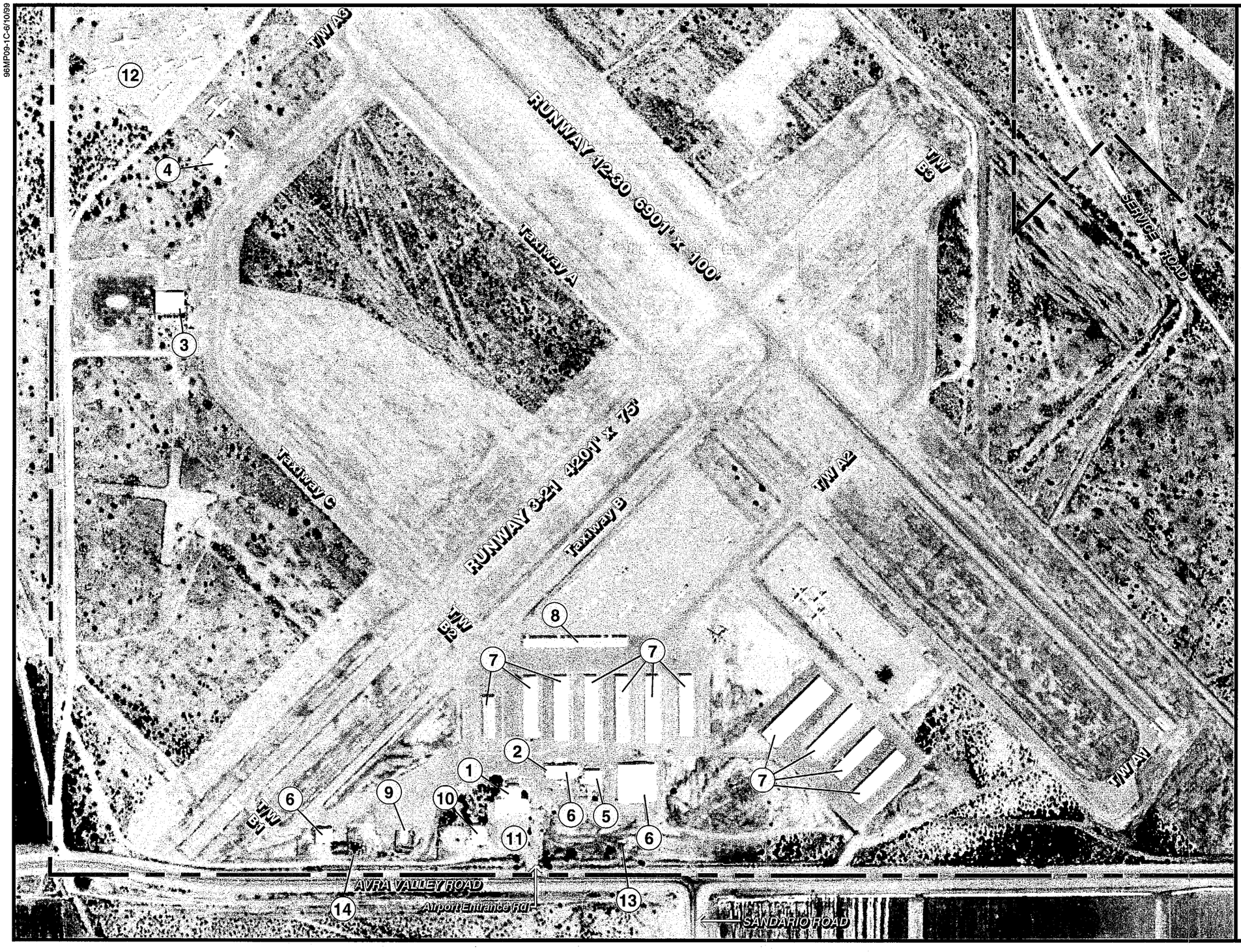

LEGEND

- Property Line
- (1) Tucson Aeroservice Center, Inc.
- (2) Pima Aviation Inc.
- (3) Marana Skydiving Center
- (4) The Constellation Group
- (5) Skywords Aviation
- (6) Conventional Hangar
- (7) T-Hanger
- (8) Shade Hangar
- (9) Fuel Facility
- (10) Sky Rider Restaurant
- (11) Auto Parking
- (12) Maricopa Aircraft
- (13) Old Water Well
- (14) New Water Well

NORTH

0 400 800

SCALE IN FEET

Photo Date: 5/11/98

AVRA VALLEY AIRPORT

Exhibit 1C
LANDSIDE FACILITIES

Fuel Facilities and Line Service Capability

Fuel storage and dispensing facilities at Avra Valley Airport are owned and operated by Tucson Aeroservice Center, Inc. Their two (2) 12,000-gallon above ground fuel tanks are augmented by three (3) radio dispatched fuel service trucks that include one (1) 1,200-gallon 100LL AvGas truck, one (1) 2,200-gallon JetA truck, and one (1) 1,200- gallon JetA truck. As previously mentioned, the 1,200 gallon JetA fuel truck is leased to Marana Skydiving Center. They also operate two (2) ground support vehicles: one (1) Hobart 1,200 amp GPU and one (1) Hobart 4,000 DBW Tug.

Automobile Parking

Parking for approximately 125-plus automobiles is provided in the paved parking lot directly south of Tucson Aeroservice Center. This outside-the-gate lot is accessed from the main airport entrance drive on Avra Valley Road, and also affords parking for non-aviation customers visiting the Sky Rider Restaurant. Other auto parking is available in the unpaved parking area south of Marana Skydiving as well as at various undesignated locations throughout the Airport property.

Airport Emergency Response Capability

Presently, there is no dedicated full time Aircraft Rescue and Fire Fighting (ARFF) facility or personnel at Avra Valley Airport. The airport, however, does maintain one (1) initial response truck on-site. Fire fighting equipment on this truck is limited to a 35-gallon water/foam tank, and 20-gallon dry chemical tank. The truck is generally parked just north of Tucson Aeroservice Center's offices. The Northwest Avra Valley Fire Department and the Picture Rocks Fire Department, each located within five miles of the airport, are also available in the event of an emergency.

Weather Observation Facilities

Also, at the Airport is a weather reporting system known as an AWOS III. This system was commissioned at the same time (June 1999) as the previously discussed NDB facility. An AWOS is a computerized, automated weather system, that measures one or more weather parameters, analyzes the data, prepares a weather observation utilizing the measured parameters, and conveys this observation to pilots through an integral very high frequency (VHF) radio or other existing navaid. At Avra Valley Airport, these up-to-date weather observations are transmitted to airborne traffic through the NDB (LF) on 245.0, identifier AVQ, and are also available to pilots on the ground through a computer monitor or by using the phone that is connected to the AWOS, both the monitor and the phone are in the Pilot's Room found in the lobby of Tucson Aeroservice Center. Those off the Airport can access the AWOS by dialing (520)682-4104 for recorded, up-to-date aviation-related weather information.

Utilities

An important factor in determining future development at an airport is the availability or presence of utilities necessary to support development. An inventory of the existing utilities at Avra Valley Airport follows:

- Water to the airport is supplied by two (2) on-airport well sites. Currently these wells meet the water pressure and capacity demands of the airport. Tucson Aeroservice, Inc., and the County share maintenance for the airport water distribution system.

- Sanitary sewer is provided utilizing ten (10) individual septic systems on airport property. No documented capacity regarding this system was available at the time the Airport's inventory was conducted.

- Storm drainage on the airport is provided by a drainage channel and detention basin constructed on the west side of the airport property. Additionally, mid-field storm water is channeled to a run-off ditch that is graded to drain off-site in the direction of the Santa Cruz River.

- Electricity is supplied through three (3) transformers (one 150 KVA, three phase unit; and two 25 KVA single phase units) by Trico Electric Cooperative which supplies the rural areas surrounding Tucson. All electrical power distribution on-airport is underground, thus eliminating overhead power line hazards.

- Phone service to the Airport is provided by US West.

- Southwest Gas provides natural gas service to the airport.

- Solid waste pickup and disposal is contracted to BFI, Inc.

AIRSPACE, AIR TRAFFIC CONTROL, AND AREA AIRPORTS

Regional Airspace

The FAA has established an airspace structure to regulate and develop procedures for aircraft operating within U.S. Airspace. These procedures and regulations help to ensure a safe and efficient airspace environment for all categories of aviation. The U.S. airspace structure provides for two basic categories of airspace, controlled and uncontrolled, and identifies them as Classes A, B, C, D, E, and G. **Exhibit 1D**, further defines airspace classifications.

Class A airspace is controlled airspace and includes all airspace from 18,000 feet mean sea level (MSL) to Flight Level 600 (approximately 60,000 feet MSL). Class B airspace is controlled airspace surrounding high activity commercial service airports (i.e. Phoenix Sky Harbor International Airport). Class C airspace is controlled airspace surrounding lower activity commercial service (Tucson International Airport) and some military airports (Davis-Monthan Air Force Base). Class D airspace is controlled airspace surrounding airports with an air traffic control tower. All aircraft operating within Class A, B, C, and D airspace must be in contact with the air traffic control facility responsible for the particular airspace. Class E airspace is controlled airspace that encompasses all instrument approach procedures and low altitude federal airways. Only aircraft conducting instrument flights are required to be in contact with air traffic control when

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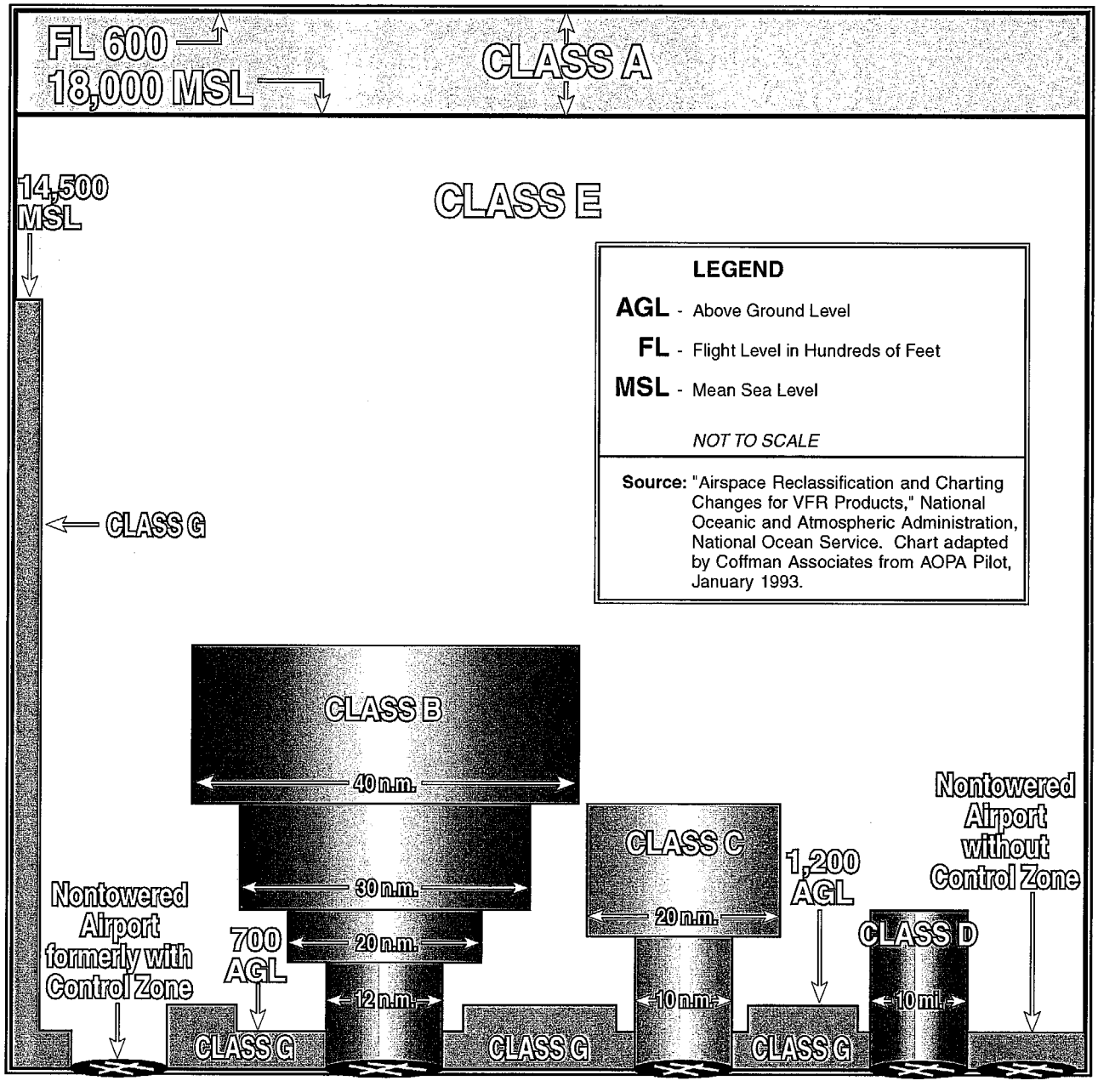

NEW CLASSIFICATION	OLD CLASSIFICATION
CLASS A	Positive Control Area, Continental Control Area (part)
CLASS B	Terminal Control Area (TCA)
CLASS C	Airport Radar Service Area (ARSA)
CLASS D	Control Zone with Tower, Airport Traffic Area
CLASS E	Continental Control Area (part), Transition Areas, Control Zones without Tower
CLASS G	Uncontrolled Airspace

AVRA VALLEY AIRPORT

Exhibit 1D
AIRSPACE CLASSIFICATION

operating in Class E airspace. While aircraft conducting visual flights in Class E airspace are not required to be in radio communication with air traffic control facilities, visual flight can only be conducted if minimum visibility and cloud ceilings exist. Class G is uncontrolled airspace that is not Class A, B, C, D, or E controlled airspace. In general, within the United States, Class G Airspace extends up to 14,500 feet above mean sea level (MSL). At and above this altitude, all airspace is within Class E Airspace, excluding the airspace less than 1,500 feet above the terrain and certain special use airspace areas.

Exhibit 1E, depicts the airspace in the vicinity of Avra Valley Airport. The Airport is 22 nautical miles west-northwest of Tucson International Airport, and 12 nautical miles northwest of Tucson Class C Airspace. Avra Valley Airport lies in Class G Airspace, and although there is no air traffic control tower on the airport, the unicom frequency of 123.0 is used by aircraft in the vicinity of the airport to obtain airport information and advise other aircraft of their position and intentions. At the Airport, Runway 3 and Runway 30 use a right-hand traffic pattern (i.e., all approach and departure turns are made to the right), while Runways 12 and 21 use the standard left-hand pattern (all turns made to the left).

The FAA has established a system of federal airways for aircraft flying between airports. These systems are depicted on aeronautical charts along with enroute navigational aids that assist pilots in navigation between their departure and destination points. There are two types of airways systems: The **Low Altitude System** known as **Victor Airways**, and the **High Altitude System** known as **Jet Routes**. Victor Airways are airspace corridors eight miles wide that begin at 1,200 Above Ground Level (AGL) and extend upwards to but not including 18,000 feet above Mean Sea Level (MSL). High altitude aircraft utilize the Jet Routes layered above the Victor Airways, these Jet Routes begin at 18,000 MSL and continue upwards to 45,000 feet MSL. Navigation within the Jet Route requires an Instrument Flight Plan and aircraft must maintain radio contact with air traffic control facilities.

Exhibit 1E, reveals two Victor Airways, V16 and V105, within the vicinity of Avra Valley Airport. Victor 16 crosses nearly directly over the Airport, connecting the Tucson VORTAC to the southeast and the Phoenix VORTAC to the northwest. Approximately 9.5 miles southwest of the Airport is Victor 105 that connects the Tucson VORTAC to the Stanfield VORTAC to the northwest as well as merging with Victor 66 and the Gila Bend VORTAC further to the northwest. Currently, there are no Jet Routes in the vicinity affecting operations at the Airport. However, the ILS Approach Path for Runway 11L at Tucson International does pass southwest of the Airport.

Special Use Airspace

As previously noted, Avra Valley Airport is 22 nautical miles west-northwest of Tucson International Airport, and 12 nautical miles northwest of Tucson Class C Airspace. Aircraft continuing through or departing from the Avra Valley Airport area and entering Tucson Class C Airspace must contact Tucson Approach within 20 nautical miles and prior to entering their airspace. Tucson Class C Airspace also includes Davis Monthan Air Force Base. Additionally, pilots are advised to be alert for extensive civil parachute training activity within a 15 nautical mile radius of the airport, as well as an aircraft aerobatic box

area located 2 miles south of the airport. Saguaro National Park is 4 miles south of the Airport, and while overflight is not restricted there, aircraft are requested to maintain a minimum altitude of 2,000 feet AGL. It should be noted that the highest point within the park is Wasson Peak at 4687 feet MSL.

Air Traffic Control

The FAA has established 21 Air Route Traffic Control Centers (ARTCC) covering the continental United States for the control of aircraft operating under Instrument Flight Rules (IFR) within controlled airspace and while in the enroute phase of flight. An ARTCC assigns specific flight routes and altitudes along federal airways to maintain aircraft separation and orderly air traffic flow. These centers employ radio communication and long range radar with automatic tracking capability to provide enroute air traffic services. The ARTCC typically splits its airspace into two sectors, assigning a controller or team of controllers to each sector. As an aircraft travels through the ARTCC, one hands control off to the other. Each sector uses discrete radio frequencies to guide the aircraft through its control sector.

For aircraft arriving and departing Avra Valley Airport, and in the enroute phase of their flight, route guidance assistance is available from the Albuquerque Air Route Traffic Control Center (ARTCC). The Albuquerque ARTCC controls aircraft in a large multi-state area.

Area Airports

There are a number of airports of various sizes, capacities, and functions near Avra Valley Airport. Generally, airports which have any significant influence to an airport similar to Avra Valley Airport are in approximately a 30 nautical mile range of the airports. The airports described below are those within approximately 30 nautical miles of the airport and are important to the airspace and air traffic control environment of the area. Historical based aircraft and operations data was obtained from the 1995 State Aviation Needs Study (SANS).

Tucson International Airport is 22 nautical miles southeast of Avra Valley Airport. Tucson International serves the air carrier needs as wells as a large portion of the general aviation needs of the region. Runway 11L-29R is 10,994 feet long by 150 feet wide with a strength rating of 585,000 pounds Double-Dual Tandem (DDT). Runway 11R-29L is 9117 feet long by 75 feet wide, and is rated at 220,000 pounds DT. Crosswind Runway 3-21 is 7000 feet long by 150 feet wide with a rating of 500,000 pounds DDT. These three runways are capable of handling all types of commercial and general aviation aircraft in nearly all weather conditions. According the PAG RASP, General Aviation (GA) operations for 1995 were 71,000, with based GA aircraft numbers totaling 355.

Pinal Airpark is located 8 nautical miles northwest of Avra Valley Airport near

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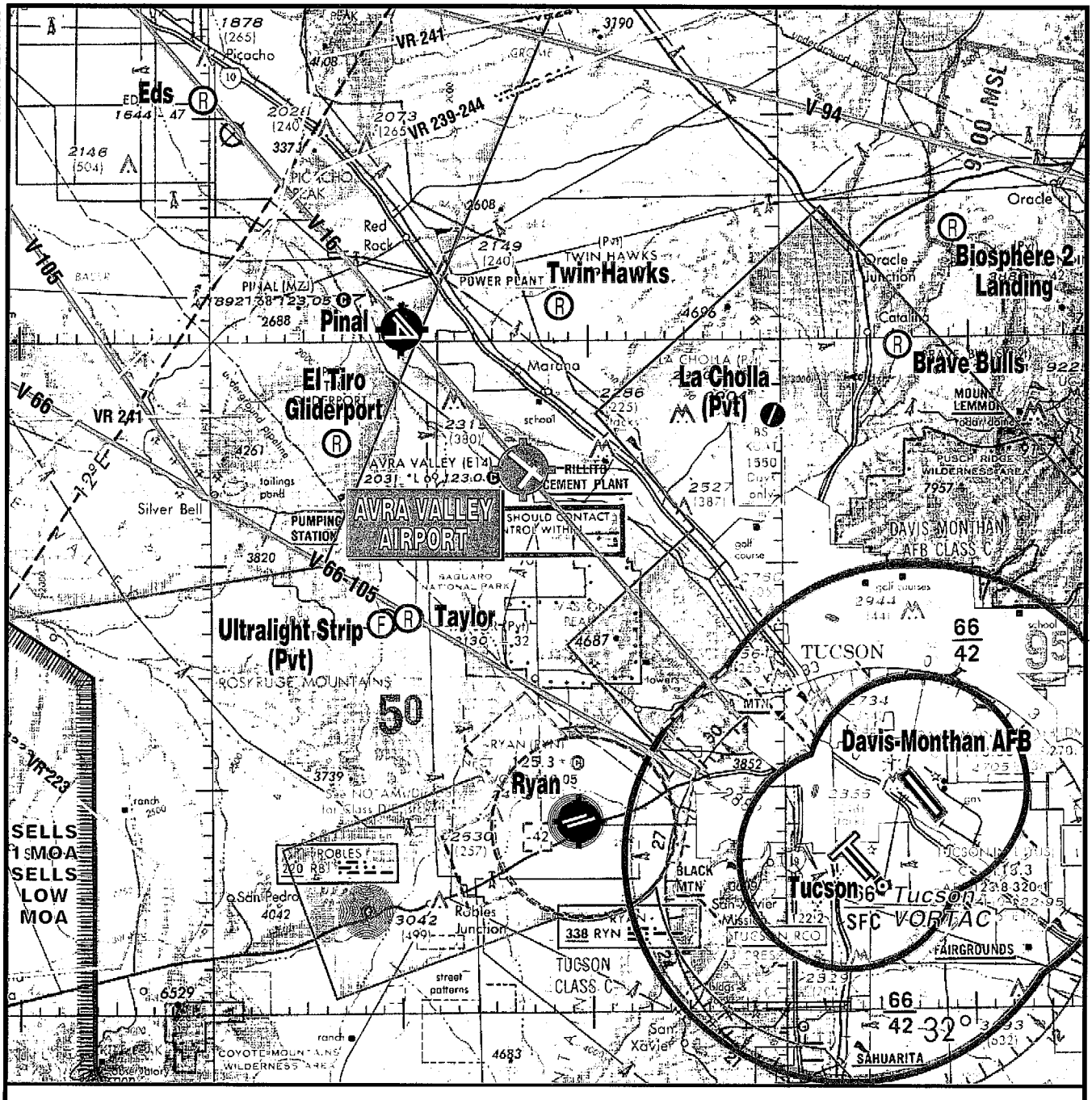

LEGEND

- Hard-surfaced runways 1500 ft. to 8069 ft.
- Hard-surfaced runways greater than 8069 ft. or some multiple runways less than 8069 ft.
- Private
- Services Available
- VORTAC
- Non-Directional Radiobeacon (NDB)
- Victor Airways
- Military Training Routes
- Military Operations Area (MOA)
- Class C Airspace
- Class D Airspace
- Class E Airspace
- Class E Airspace with floor 700 ft. above surface

NORTH

0 8
SCALE IN MILES

AVRA VALLEY AIRPORT

Exhibit 1E
REGIONAL AIRSPACE SETTING

Marana. Runway 12-30 is 6,860 feet long, 150 feet wide, constructed of asphalt, and is equipped with medium intensity runway lighting. In 1995, there were 22 based aircraft and approximately 9,000 operations at Pinal Airpark. The Silverbell Army Heliport and Western Army National Guard Aviation Training Site Facility are located adjacent to the north end of Pinal Airpark. Pinal Airpark is used extensively for military helicopter training operations.

Ryan Field is located 19 nautical miles southeast of Avra Valley Airport near Tucson. The airport is served by three runways, two parallel asphalt-paved runways and a single dirt runway. Runway 6R-24L, 5500 feet long by 75 feet wide is the main runway. The other paved runway, Runway 6L-24R, is 4900 feet long by 75 feet wide. Each of these runways has a strength rating of 30,000 pounds dual wheel and can accommodate a wide variety of aircraft. Runway 15-33, the dirt runway is 3547 feet long by 75 feet wide, with an estimated strength rating of 12,500 (SW) under normal, dry conditions. While Avra Valley Airport, primarily serves the general aviation needs of the North Tucson metropolitan area, Ryan Field serves those same needs for the southern metropolitan area.

Additionally, there are five other private airports or landing sites within a 15-mile radius of Avra Valley Airport. El Tiro Gliderport, located 10 miles west of the airport, has an unpaved 2,100-foot runway. Thirteen miles northeast is La Cholla with a 4,500-foot paved runway. Approximately 9 miles to the northeast is Twin Hawks, with a 2,800-foot runway. Taylor, another private airport, is located approximately 9.5 miles to the southwest and has a 3,200-foot runway. In the immediate vicinity of Taylor is a private ultralight strip whose name and runway length were unavailable. Generally, these airports either are unavailable to the public or require prior permission to use. None of these are airports are available for public use and therefore generate little air traffic activity. In addition to the above airfields, there is small private runway about one-quarter mile from the northwest corner of Avra Valley Airport. This runway's east-west alignment has it's eastern runway end located approximately 600 feet off the approach end of Runway 12. Any aircraft operating from this runway would present a severe conflict with flight operations at Avra Valley Airport.

The regional relationship of Avra Valley Airport to the above airports is illustrated on **Exhibit 1E**.

SOCIOECONOMIC CHARACTERISTICS

A variety of both historical and socioeconomic data related to Marana, Tucson, and Pima County has been collected for use in the various elements of the master plan process. This information is essential in determining aviation service level, as well as forecasting based aircraft and aircraft activity at the airport. Aviation forecasts are often directly related to the population base, economic strength of the region, and the ability of that region to sustain a strong economic base over an extended period of time.

Population

The size and structure of the local communities and the service area that the airport supports are important factors to

consider in the planning of an airports facilities. These elements provide an understanding of the economic base necessary to determine future airport requirements.

Increases in State and local population have resulted from immigration from other states and Mexico. Approximately two-thirds of state residents have moved to Arizona from elsewhere. According to statistics obtained from the Arizona Department of Economic Security, Pima County, with nearly 800,000 residents, is Arizona's second largest county. As of 1995, the City of Tucson accounts for roughly 60 percent of the county population, and the Town of Marana less than 1 percent.

However, future growth projections covering the next 30 years put Marana's average growth at 9.9 percent, while Tucson's and the County's show 1.1 percent and 1.8 percent, respectively. The region as a whole reflects Arizona's continued ranking as one the fastest growing states in the country.

Historical population data and projected growth estimates for Marana, Tucson and Pima County as reflected in **Table 1D, Population Trends**, were obtained from Arizona Department of Economic Security, Research Administration, Population Statistics Unit.

TABLE 1D
Population Trends
Population (1985-2025)

Year	Town of Marana	Percent Change	City of Tucson	Percent Change	Pima County	Percent Change
1985	2,095	--	377,545	--	624,300	--
1990	2,187	0.87%	405,390	1.43%	666,957	1.33%
1995	5,160	18.70%	447,075	1.98%	758,050	2.60%
FORECASTS						
2005	29,518	19.05%	508,521	1.30%	943,800	2.22%
2015	62,328	7.76%	565,736	1.07%	1,119,350	1.72%
2025	88,678	3.59%	612,051	0.79%	1,291,000	1.44%

Source: Arizona Department of Economic Security, Research Administration, Population Statistics Unit December 1997

Employment

A review of the data presented in **Table 1E, Employment By Sector**, shows strong employment growth for Pima County from 1992 through 1996. Other than the mining industry, all areas of employment have experienced measurable growth.

This data shows the four largest employment areas to be the Services sector with 26.3 percent of the labor force, Government at 18.6 percent, Retail/Wholesale Trade 18.2 percent,

and Agriculture at 16.3 percent.

Aerospace, tourism, and computer technology, have long been the mainstays of the Tucson Metropolitan Area economy. Recent entries such as optics, healthcare, environmental technologies, BioIndustries, and teleservices have served to both bolster and broaden the regions economic viability. With its ideal climate and favorable business environment Tucson and Pima County are very attractive to businesses looking to relocate or expand their operating base. Despite a steadily growing population, unemployment in the Greater Tucson Area has remained below 5 percent since 1993.

TABLE 1E
Employment By Sector (1992-1996)
Tucson Metropolitan Area

Sector	1992	1993	1994	1995	1996	Avg. Annual Growth Rate
Agriculture, Farming and Ranching	44,400	34,000	53,100	71,800	60,000	6.4%
Manufacturing	24,000	23,000	24,200	27,900	28,600	3.6%
Mining and Quarrying	2,300	2,200	2,600	2,200	2,300	0.0%
Construction	14,200	15,700	18,700	19,300	19,100	6.1%
Transportation and Public Utilities	10,800	11,500	13,100	13,500	13,400	4.4%
Retail/Wholesale Trade	62,300	63,400	66,900	67,700	67,000	1.5%
Finance, insurance and Real Estate	11,600	11,900	12,500	12,000	12,200	1.0%
Services and Miscellaneous	78,100	83,100	88,000	91,300	96,700	4.4%
Government	61,000	63,400	65,500	68,400	68,500	2.3%
Totals	308,700	308,200	344,600	374,100	367,800	3.6%

Source: Arizona Department of Economic Security, Research Administration, December 1997.

Per Capita Personal Income

Table 1F, Per Capita Income reflects the Per Capita Personal Income (PCPI) for Pima County, The State of Arizona, and the United States between 1985 and 1995.

In 1995, Pima County had a PCPI of $19,485, this figure represents 95 percent of Arizona's average and 84 percent of the national average (PCPI). The average annual growth rate for Pima County is comparable with both the State of Arizona, and the United States, as illustrated in **Table 1F**.

TABLE 1F
Per Capita Personal Income (PCPI)
Pima County, State of Arizona, United States

Jurisdiction	1985	1990	1995	Average Annual Growth Rate
Pima County[1]	$12,569.00	$15,631.00	$19,485.00	4.48%
State of Arizona[2]	$13,220.00	$16,542.00	$20,489.00	4.48%
United States[2]	$14,155.00	$19,142.00	$23,208.00	5.07%

Sources: [1] BEA, prepared by the University of Arizona, College of Business and Public Administration.
[2] BEA, REIS, Table SA2, September 1996 (includes 1969-1995 revisions), prepared by the Arizona Department of Economic Security, Economic Analysis, 1996.

CLIMATE

The Tucson area is renowned for its superb weather. Warm and sunny throughout most of the year, its 300 plus days of sunshine make it ideal for general aviation activities. Annual precipitation is around 12 inches, with most of this occurring during the summer "monsoon" season that lasts from late July through early September. Occasionally, blowing dust and high winds limit visibility during these periods of thunderstorm passage. The mean maximum airport temperature for Avra Valley Airport is 102.8 degrees (F) in July, while the normal daily mean temperatures for the Tucson Metropolitan Area ranges from a high of 98.5 degrees (F) in July to an annual low of 38.1 degrees (F) in the coldest month, January. The prevailing wind direction is from the northwest with light early morning breezes that increase slightly throughout the afternoon. Mostly calm winds prevail from dusk to dawn. Again, during periods of thunderstorm activity wind speeds of above 50 miles per hour are not unusual. The All Weather and IFR Wind Roses shown on **Wind Coverage, Exhibit 1F**, were constructed using historical data collected at Tucson International Airport between 1988 and 1987, and illustrates a more detailed analysis of wind conditions as they pertain to runway orientation.

REGIONAL TRANSPORTATION NETWORK

Air service is but one component of the complete transportation network of a community. Additional elements may compliment or compete with air transportation and influence demands made on the airport. Analyzing other transportation elements that may constrain or contribute to demands on the air transportation facility is therefore necessary.

An inadequate, congested road network can create barriers that impede traffic flow. Such barriers may inhibit airport access to the point where pilots, businesses, and other airport users may seek alternate airports or transportation modes. If a facility is to maintain its serviceability and reach its projected potential it must be "user friendly." Avra Valley Airport, with it's rural location (lack of congested urban traffic) and proximity (easy trucking access) to Interstate 10 seems to provide such potential.

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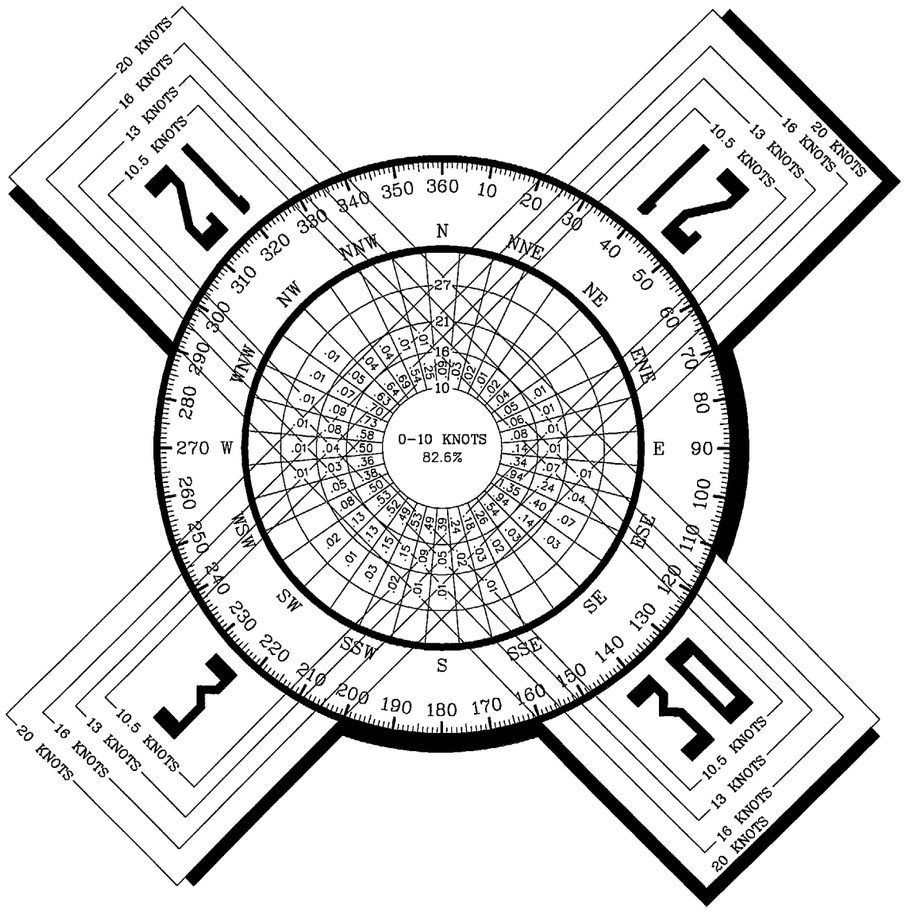
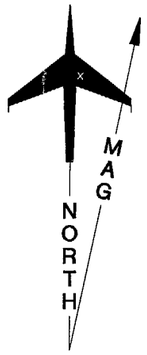
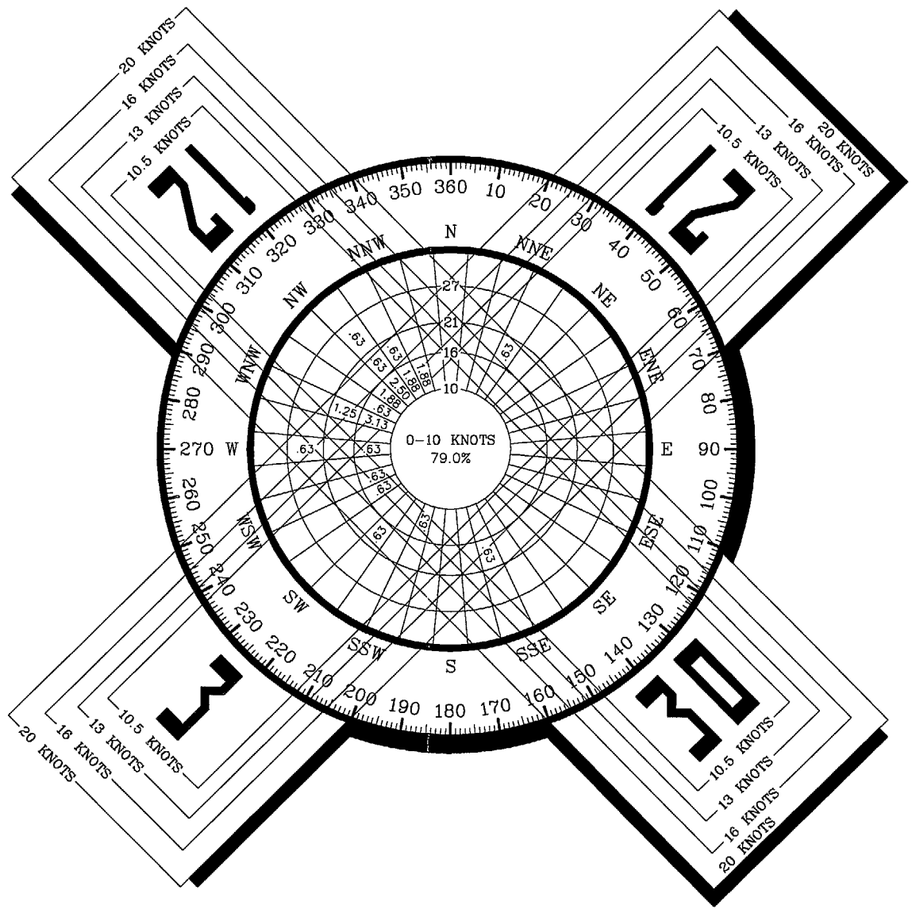




Magnetic Variance
11° 59' East (April 1999)
Annual Rate of Change
0.3' West (April 1999)

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Tucson International Airport
Tucson, Arizona

OBSERVATIONS:
87,644 All Weather Observations
160 IFR CAT160I Observations
1988 – 1997



ALL WEATHER WIND ROSE

ALL WEATHER WIND COVERAGE

RUNWAYS	10.5 KNOTS (12 M.P.H.)	13 KNOTS (15 M.P.H.)	16 KNOTS (18 M.P.H.)	20 KNOTS (23 M.P.H.)
Runway 3–21	*89.39%*	*93.79%*	*98.34%*	*99.62%*
Runway 12–30	*94.83%*	*97.12%*	*99.03%*	*99.76%*
Combined	*99.39%*	*99.88%*	*99.98%*	*100.00%*

IFR WIND ROSE

IFR CAT-I WIND COVERAGE

RUNWAYS	10.5 KNOTS (12 M.P.H.)	13 KNOTS (15 M.P.H.)	16 KNOTS (18 M.P.H.)	20 KNOTS (23 M.P.H.)
Runway 3–21	*83.82%*	*88.84%*	*95.15%*	*98.42%*
Runway 12–30	*95.62%*	*96.64%*	*97.62%*	*99.05%*
Combined	*99.21%*	*99.38%*	*99.58%*	*100.00%*

AVRA VALLEY AIRPORT

Exhibit 1F
WIND COVERAGE

Regional Highway System

Interstate Highway 10 provides access to Phoenix approximately 80 miles to the north, and to Tucson approximately 18 miles to the south. Interstate 10 is the main U.S. Interstate Highway truck route linking the southern United States from Southern California through the western and gulf coast states on into to Florida on the east coast.

Public Transportation

Presently mass transit is unavailable to and from Avra Valley Airport. The City of Tucson's bus system does not extend to northern Pima County, and the Town of Marana has no city bus service, therefore, local residents must rely mainly on the automobile for transportation. Taxi service is available on a "call and request" basis to and from Avra Valley Airport, however, there is no full or part time taxi service stationed at the Airport. Greyhound Bus Lines does provide daily service to and from both Phoenix and the Tucson/Marana areas.

Competitive Modes

Several intrastate and interstate freight carriers serve the Northeastern Pima County and the Tucson Metropolitan Area. These carriers provide both overnight and second-day delivery service to most major metropolitan areas in the country. Rail service is unavailable to the Airport, however, the Southern Pacific Transportation rail system has a main line running through Tucson, and serves west coast states along with midwestern and southern states along this line. Amtrak schedules three eastbound and three westbound passenger trains that run through Tucson weekly. Amtrak's stops along this route include Los Angeles, Yuma, Phoenix, El Paso, San Antonio, Houston and New Orleans.

SUMMARY

The information discussed in this chapter provides a foundation from which the remaining elements of the master plan can be constructed. This inventory information on the current facilities at Avra Valley Airport will be the basis, along with additional analysis and data collection, for developing forecasts of aviation activity (Chapter 2), and defining future facility requirements (Chapter 3). This chapter also provides the proper perspective from which to develop a feasible master plan that serves the needs of Marana, North Tucson Metropolitan Area, and North Central Pima County.